



Docket No.: P-0216

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES**

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In re Application of

Confirmation No.: 6826

Sun Jin PARK

Group Art Unit: 2675

Serial No.: 09/853,668

Examiner: Chanh Nguyen

Filed: May 14, 2001

Customer No.: 34610

For: METHOD AND APPARATUS FOR ADJUSTING A BRIGHTNESS OF A
DISPLAY SCREEN

TRANSMITTAL OF APPEAL BRIEF

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Sir:

Submitted herewith in triplicate is Appellant(s) Appeal Brief in support of the Notice of Appeal filed June 22, 2004. Enclosed is Check No. 12626 for the Appeal Brief fee of \$330.00.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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Date: August 20, 2004

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This Appeal Brief is submitted in support of the Notice of Appeal filed June 22, 2004.

REAL PARTY IN INTEREST

The party in interest is the assignee, LG Electronics Inc. The assignment document is recorded at Reel 011807 and Frame 0689.

08/23/2004 HVUONG1 00000022 09853668

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RELATED APPEALS AND INTERFERENCES

There are no related appeals and interferences. However, a Petition to the Commissioner was filed on August 6, 2004 regarding the Election of Species Requirement and improperly withdrawn claims.

STATUS OF THE CLAIMS

This is an appeal from the final rejection dated February 23, 2004 of claims 14-18, 24-28, 32-37, 43-47, 55-56, and 59-62. No other claims are pending.

STATUS OF AMENDMENTS

All Amendments filed in this application have been entered. A correct copy of appealed claims 1-62, including all entered amendments thereto, appears in the attached Appendix.

SUMMARY OF THE INVENTION

The present invention is directed to methods and apparatus according to embodiments of the invention for adjusting a brightness of a display screen. For example, a method according to embodiments of the invention may include determining whether there are user signal inputs, switching the system into an IDLE mode if there are no user signal inputs, determining processor unit usage indicative of whether certain display related processes are running when in the IDLE mode, and adjusting the brightness of the display screen when in the IDLE mode

based on processor unit usage. An apparatus according to embodiments of the invention may include means for monitoring a system to determine whether certain display related processes are running, means for maintaining the brightness of a display if certain display related processes are running, and means for reducing the brightness of a display if certain display related processes are not running. Further, the methods according to embodiments of the invention may be implemented by storing on a computer-readable medium a sequence of instructions which, when executed by a processor, cause the processor to perform the steps of the invention.

The methods and apparatus according to embodiments of the invention include the step of or apparatus for determining processor unit usage indicative of whether certain display related processes are running. For example, Fig. 2A of the present application is a flow chart illustrating a method according to an embodiment of the invention for adjusting a brightness of a display screen. In step S24, the method of Fig. 2A determines whether display related processes are running. As set forth in the specification, “[d]isplay related processes’ may include any display intensive use of the computer where the user is watching a display screen of the apparatus.” The specification further states that “[d]isplay related process may include watching a movie on the display screen, such as by playing a CD-ROM (Compact Disc Read Only Memory), DVD (Digital Video Disc), MPEG (Moving Picture Expert Group) file, playing a video file, or similar type functions.” Thus, the step of determining processor unit usage indicative of whether certain display related processes are running may be accomplished by, but is not limited to, determining whether display related processes are running. More specifically, this step could be

accomplished by determining if the CPU usage is greater than a reference value (see Fig. 2B), or by analyzing key words present in the current processor (see Fig. 2C), or by determining whether certain memory devices are in use (see Fig. 2D), or by determining whether certain read/write devices are in use (see Fig. 2E), or by determining whether a modem is in use (see Fig. 2F). These different methods could be used by themselves to make the determination. Or, two or more of these methods could be used together to make the determination.

ISSUES

1. Whether claims 14-17, 24-28, 32-36, 43-47, 55-56, and 59-62 are anticipated under 35 U.S.C. §102(b) by Hetzler, U.S. Patent No. 5,954,820.
2. Whether claims 18 and 37 are obvious under 35 U.S.C. §103(a) over Hetzler in view of Zenda, U.S. Patent No. 5,386,577.
3. Whether withdrawn claims 1-13, 19-23, 29-31, 38-42 and 48-49 define over Hetzler.

GROUPING OF THE CLAIMS

Appealed claims 14-17, 24-28, and 55-56 form a single group and stand or fall together. Claim 14 is the only independent claim.

Appealed dependent claim 18 forms a group and stands or falls alone.

Appealed claims 32 and 59-60 form a single group and stand or fall together. Claim 32 is the only independent claim in this group.

Appealed claims 33-36, 43-47, and 61-62 form a single group and stand or fall together. Claim 33 is the only independent claim in this group.

Appealed dependent claim 37 forms a group and stands or falls alone.

It is further noted that:

Withdrawn claims 1 and 50-52 form a single group and stand or fall together. Claim 1 is the only independent claim in this group.

Withdrawn claim 2 forms a group and stands or falls alone.

Withdrawn claim 3 forms a group and stands or falls alone.

Withdrawn claim 4 forms a group and stands or falls alone.

Withdrawn claim 5 forms a group and stands or falls alone.

Withdrawn claims 6 and 11-12 form a single group and stand or fall together.

Withdrawn claims 7-10 form a single group and stand or fall together.

Withdrawn claims 13 and 53-54 form a single group and stand or fall together. Claim 13 is the only independent claim in this group.

Withdrawn claims 31 and 57-58 form a single group and stand or fall together. Claim 31 is the only independent claim in this group.

THE ARGUMENT

1. 35 U.S.C. §102(b)

Hetzler discloses a portable computer with adaptive demand-driven power management. Hetzler teaches entering a power-save mode based on access history. That is, actual user workload is used to determine which power-save mode is most appropriate and when to enter it. See col. 7, lines 43-45. A decision to enter a specific power-save mode is influenced by the recent access pattern for the component. See col. 8, lines 30-33. Access patterns “may be characterized in terms of frequencies, i.e., the rate at which component accesses occur, and a distinction of frequencies may be determined for the access history.” See col. 8, lines 37-40. The recent access patterns are then utilized to determine when to enter a power save mode.

In the May 4 personal interview, the Examiner referred to col. 8, lines 1-29 as being directed to a different embodiment which utilizes keyboard and pointing device activity as evidence of display usage which is utilized to determine whether to enter an IDLE mode and accordingly to control the brightness of the display. However, as discussed during the interview, these lines are not directed to a different embodiment but rather are explanatory disclosure directed to how the Hetzler device determines access history. The access history is then utilized statistically to determine when to exit and enter the power save modes in anticipation of the beginning and end of a periodic access. The Examiner was directed, in particular, to col. 8, lines 30-51, and more particularly, to col. 8, lines 43-47. The fact that this portion of the disclosure is under the heading “Component Access Frequency” further supports Applicant’s arguments.

A. Claims 14-17, 24-28, and 55-56

Independent claim 14 recites a computer-readable medium having stored thereon a sequence of instructions which, when executed by a processor, cause the processor to perform the steps of monitoring a system to determine whether certain display related processes are running, maintaining the brightness of a display if the certain display related processes are running, and reducing the brightness of a display if the certain display related processes are not running.

Hetzler does not disclose or suggest the above-described features of claim 14. Rather, Hetzler determines whether to enter a power-save mode based on a statistical analysis of recent access history, not by determining whether certain display related processes are running. For at least these reasons, Applicant asserts that independent claim 14 is not anticipated by Hetzler. Dependent claims 15-17, 24-28, and 55-56, are allowable at least for the reasons discussed above with respect to independent claim 14, from which they depend, as well as for their added features.

B. Claims 32 and 59-60

Independent claim 32 recites an apparatus comprising means for monitoring a system to determine whether certain display related processes are running, means for maintaining the brightness of a display if certain display related processes are running, and means for reducing the brightness of a display if certain display related processes are not running.

Hetzler does not disclose or suggest the above-described features of claim 32. Rather, Hetzler determines whether to enter a power-save mode based on a statistical analysis of recent access history, not by determining whether certain display related processes are running. For at least these reasons, Applicant asserts that independent claim 32 is not anticipated by Hetzler. Dependent claims 59-60 are allowable at least for the reasons discussed above with respect to independent claim 32, from which they depend, as well as for their added features.

C. Claims 33-36, 43-47, and 61-62

Independent claim 33 recites a method comprising monitoring the system to determine whether display related processes are running, maintaining the brightness of a display if display related processes are running, and reducing the brightness of a display if display related processes are not running.

Hetzler does not disclose or suggest the above-described features of claim 33. Rather, Hetzler determines whether to enter a power-save mode based on a statistical analysis of recent access history, not by determining whether certain display related processes are running. For at least these reasons, Applicant asserts that independent claim 33 is not anticipated by Hetzler. Dependent claims 34-36, 43-47 and 61-62 are allowable at least for the reasons discussed above with respect to independent claim 33, from which they depend, as well as for their added features.

2. 35 U.S.C. §103(a)

Zendia is cited merely for detecting low battery state and controlling the luminance based on low battery state, and thus does not overcome the deficiencies of Hetzler, discussed above with respect to independent claims 14 and 33. Accordingly, claims 18 and 37 are allowable at least for the reasons discussed above with respect to independent claims 14 and 33, from which they depend, respectively, as well as for their added features. Accordingly, the rejection of claims 18 and 37 should be withdrawn.

3. Withdrawn claims 1-13, 19-23, 29-31, 38-42, 48-54, and 57-58

A. Withdrawn claims 1 and 50-52

Independent claim 1 also defines over Hetzler. The claimed invention of independent claim 1 enters the “IDLE” mode absent signal inputs and then determines whether to adjust brightness of a display screen based on determined processor unit usage indicative of whether certain display related processes are running while in the “IDLE” mode.

Hetzler does not disclose or suggest such features. Rather, as discussed above, Hetzler merely determines whether to enter a power-save mode based on a statistical analysis of recent access history. Dependent claims 50-52 are also allowable over Hetzler for the reasons discussed above with respect to independent claim 1, from which they depend, as well as for their added features.

B. Withdrawn dependent claim 2

Hertzler does not disclose or suggest determining processor unit usage by determining a content of a registry of an operating system of the system, as recited in dependent claim 2.

C. Withdrawn dependent claim 3

Hertzler does not disclose or suggest a registry comprising HKEY_DYN_DATA\PerfStats\StatData, as recited in dependent claim 3.

D. Withdrawn dependent claim 4

Hertzler does not disclose or suggest determining processor unit usage by retrieving a keyword from an operating system that appears when a video file is read by the system, as recited in dependent claim 4.

E. Withdrawn dependent claim 5

Hertzler does not disclose or suggest determining processor unit usage by measuring a processor usage amount and reducing the brightness of the liquid crystal display screen if the processor usage amount is below a threshold value, as recited in dependent claim 5.

F. Withdrawn dependent claim 6

Hetzler does not disclose or suggest determining processor unit usage by determining whether the display screen is displaying a movie, as recited in dependent claim 6.

G. Withdrawn dependent claim 7

Hetzler does not disclose or suggest determining whether the display screen is displaying a movie by determining whether a memory device connected to the processor unit is operating, as recited in dependent claim 7.

H. Withdrawn claims 13 and 53-54

The method of independent claim 13 includes determining processor unit activity indicative of whether certain display related processes are running, and dimming a brightness of the display screen when the processor unit activity falls below a minimum threshold.

Hetzler does not disclose or suggest such features. Rather, as discussed above, Hetzler merely determines whether to enter a power-save mode based on a statistical analysis of recent access history. Dependent claims 53-54 are also allowable over Hetzler for the reasons discussed above with respect to independent claim 13, from which they depend, as well as for their added features.

I. Withdrawn claims 31 and 57-58

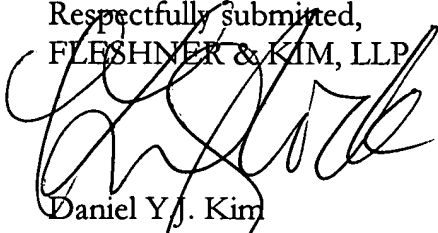
Independent claim 31 recites means for determining processor unit activity indicative of whether certain display related processes are running, and means for dimming a brightness of the display screen when the processor unit activity falls below a minimum threshold.

Hetzler does not disclose or suggest such features. Rather, as discussed above, Hetzler merely determines whether to enter a power-save mode based on a statistical analysis of recent access history. Dependent claims 57-58 are also allowable over Hetzler for the reasons discussed above with respect to independent claim 31, from which they depend, as well as for their added features.

CONCLUSION

For the above reasons, prompt withdrawal of the rejections set forth in the Final Rejection dated February 23, 2004, and allowance of the application are earnestly solicited.

Respectfully submitted,
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APPENDIX

1. A method for adjusting a brightness of a display screen of a system, the method comprising:

determining whether there are user signal inputs;

switching the system into an IDLE mode if there are no user signal inputs;

determining processor unit usage indicative of whether certain display related processes are running when in the IDLE mode; and

adjusting the brightness of the display screen when in the IDLE mode based on processor unit usage.

2. The method according to claim 1, wherein determining processor unit usage comprises determining a content of a registry of an operating system of the system.

3. The method according to claim 2, wherein the registry comprises HKEY_DYN_DATA\PerfStats\StatData.

4. The method of claim 1, wherein determining processor unit usage comprises retrieving a keyword from an operating system that appears when a video file is read by the system.

5. The method according to claim 1, wherein determining processor unit usage comprises measuring a processor usage amount, and reducing the brightness of the liquid crystal display screen if the processor usage amount is below a threshold value.

6. The method according to claim 1, wherein determining processor unit usage comprises determining whether the display screen is displaying a movie.

7. The method according to claim 6, wherein determining whether the display screen is displaying a movie comprises determining whether a memory device connected to the processor unit is operating.

8. The method according to claim 7, wherein the memory device comprises a hard disk.

9. The method according to claim 7, wherein the memory device comprises a CD-ROM.

10. The method according to claim 7, wherein the memory device comprises a DVD.

11. The method according to claim 6, wherein the brightness of the display screen is reduced if the liquid crystal display screen is not displaying a movie.

12. The method according to claim 6, wherein the brightness of the display screen is maintained if the display screen is displaying a movie.

13. A method for reducing electrical power consumed by a processor unit controlled display screen, the method comprising:

determining processor unit activity indicative of whether certain display related processes are running; and

dimming a brightness of the display screen when the processor unit activity falls below a minimum threshold.

14. A computer-readable medium having stored thereon a sequence of instructions which, when executed by a processor, cause the processor to perform the steps of:

monitoring a system to determine whether certain display related processes are running;

maintaining the brightness of a display if the certain display related processes are running; and

reducing the brightness of a display if the certain display related processes are not running.

15. The computer readable medium of claim 14, wherein the system is a computer.

16. The computer readable medium of claim 14, wherein the display is a liquid crystal display screen.

17. The computer readable medium of claim 14, further having stored thereon a sequence of instructions which, when executed by a processor, cause the processor to perform the step of monitoring for user input signals.

18. The computer readable medium of claim 14, further having stored thereon a sequence of instructions which, when executed by a processor, cause the processor to perform the step of determining whether the system is powered by an internal power source.

19. The computer-readable medium of claim 14, wherein the monitoring step comprises determining a processor unit usage amount, and comparing said processor unit usage amount against a reference amount.

20. The computer-readable medium of claim 19, wherein the reference amount is controllably variable.

21. The computer-readable medium of claim 19, wherein determining a processor unit usage amount comprises determining information contained in a registry.

22. The computer-readable medium of claim 21, wherein the registry comprises HKEY_DYN_DATA\PerfStats\StatData.

23. The computer-readable medium of claim 14, wherein the monitoring step comprises determining whether a video process related keyword is contained in the currently operating process.

24. The computer-readable medium of claim 14, wherein monitoring for user input signals comprises determining whether a video process related device is in use.

25. The computer-readable medium of claim 24, wherein the video process related device comprises a readable-and-writeable memory device.

26. The computer-readable medium of claim 24, wherein the video process related device comprises a read-only memory device.

27. The computer-readable medium of claim 25, wherein the read-only memory device comprises a CD-ROM.

28. The computer-readable medium of claim 25, wherein the read-only memory device comprises a DVD.

29. The computer-readable medium of claim 24, wherein the video process related device comprises a modem.

30. The computer-readable medium of claim 14, wherein the monitoring step comprises:

determining a processor unit usage amount and comparing said processor unit usage amount against a reference amount;

determining whether a video process related keyword is contained in the currently operating process; and

determining whether a video process related device is in use.

31. An apparatus for reducing electrical power consumed by a processor unit controlled display screen, the apparatus comprising:

means for determining processor unit activity indicative of whether certain display related processes are running; and

means for dimming a brightness of the display screen when the processor unit activity falls below a minimum threshold.

32. An apparatus, comprising:

means for monitoring a system to determine whether certain display related processes are running;

means for maintaining the brightness of a display if certain display related processes are running; and

means for reducing the brightness of a display if certain display related processes are not running.

33. A method for adjusting a brightness of a display screen of a system, the method comprising:

monitoring the system to determine whether display related processes are running;

maintaining the brightness of a display if display related processes are running; and

reducing the brightness of a display if display related processes are not running.

34. The method according to claim 33, wherein the system is a computer.
35. The method according to claim 33, wherein the display is a liquid crystal display screen.
36. The method according to claim 33, further comprising:
monitoring for user input signals.
37. The method according to claim 33, further comprising: determining whether the system is powered by an internal power source.
38. The method according to claim 33, wherein monitoring the system for display related processes comprises determining a processor unit usage amount, and comparing said processor unit usage amount against a reference amount.
39. The method according to claim 38, wherein the reference amount is controllably variable.
40. The method according to claim 38, wherein determining a processor unit usage amount comprises determining information contained in a registry.

41. The method according to claim 40, wherein the registry comprises HKEY_DYN_DATA\PerfStats\StatData.

42. The method according to claim 33, wherein monitoring the system for display related processes comprises determining whether a video process related keyword is contained in the currently operating process.

43. The method according to claim 33, wherein monitoring the system for display related processes comprises determining whether a video process related device is in use.

44. The method according to claim 43, wherein the video process related device comprises a readable-and-writeable memory device.

45. The method according to claim 43, wherein the video process related device comprises a read-only memory device.

46. The method according to claim 45, wherein the read only memory device comprises a CD-ROM.

47. The method according to claim 45, wherein the read-only memory device comprises a DVD.

48. The method according to claim 43, wherein the video process related device comprises a modem.

49. The computer-readable medium of claim 33, wherein monitoring the system for display related processes comprises:

determining a processor unit usage amount and comparing said processor unit usage amount against a reference amount;

determining whether a video process related keyword is contained in the currently operating process; and

determining whether a video process related device is in use.

50. The method according to claim 1, wherein the display is a liquid crystal display screen.

51. The method of claim 1, wherein the display related processes include at least one of:

playing a CD-ROM;

playing a DVD;
playing a MPEG file; or
playing a video file.

52. The method of claim 1, wherein the display related processes do not include user inputs via a mouse or a keyboard.

53. The method of claim 13, wherein the display related processes include at least one of:

playing a CD-ROM;
playing a DVD;
playing a MPEG file; or
playing a video file.

54. The method of claims 13, wherein the display related processes do not include user inputs via a mouse or a keyboard.

55. The computer-readable medium of claim 14, wherein the display related processes include at least one of:

playing a CD-ROM;

playing a DVD;
playing a MPEG file; or
playing a video file.

56. The computer-readable medium of claim 14, wherein the display related processes do not include user inputs via a mouse or a keyboard.

57. The apparatus of claim 31, wherein the display related processes include at least one of:

playing a CD-ROM;
playing a DVD;
playing a MPEG file; or
playing a video file.

58. The apparatus of claim 31, wherein the display related processes do not include user inputs via a mouse or a keyboard.

59. The apparatus of claim 32, wherein the display related processes include at least one of:

playing a CD-ROM;

playing a DVD;
playing a MPEG file; or
playing a video file.

60. The apparatus of claim 32, wherein the display related processes do not include user inputs via a mouse or a keyboard.

61. The method of claim 33, wherein the display related processes include at least one of:

playing a CD-ROM;
playing a DVD;
playing a MPEG file; or
playing a video file.

62. The method of claim 33, wherein the display related processes do not include user inputs via a mouse or a keyboard.